Claims:

1. A process for separating VWF having a high activity from VWF having a low activity, comprising a chromatography with hydroxylapatite as a chromatography matrix.

2. A process for the production of a composition having a high specific VWF activity, characterized in that a VWF containing composition is purified by means of hydroxylapatite chromatography.

3. A process for raising the specific VWF activity of a VWF containing composition, characterized in that the VWF containing composition is subjected to a hydroxylapatite chromatography.

4. The process according to any of claims 1 to 3, characterized in that VWF is bound to the hydroxylapatite column matrix, VWF having a low specific activity is washed out and then VWF having a high specific activity is eluted at a relatively high salt concentration.

5. The process according to any of claims 1 to 4, characterized in that the chromatography is carried out at a pH between 5 and 7, preferably between 5.5 and 6.8.

6. The process according to any of claims 1 to 5, characterized in that a sodium or potassium phosphate containing solution is used as a running buffer.

7. The process according to any of claims 1 to 6, characterized in that the wash buffer contains 100 – 300 mM, preferably 200 – 300 mM, and the elution buffer contains 200 – 500 mM, preferably 300 – 400 mM, sodium or potassium phosphate.

8. The process according to any of claims 1 to 7, characterized by initially carrying out flow chromatography with hydroxylapatite, rechromatographing the

flow fraction under binding conditions and eluting the target protein as a highly pure VWF fraction.

9. The process according to any of claims 1 to 8, characterized in that ceramic hydroxylapatite is used.

10. The process according to claim 9, characterized in that the ceramic hydroxylapatite is type I or type II.

11. The process according to any of claims 1 to 10, characterized in that a previously purified plasma fraction is used as the starting material.

12. The process according to any of claims 1 to 11, characterized in that a further purified cryoprecipitate solution is used as the starting material.

13. The process according to any of claims 1 to 12, characterized in that a cryoprecipitate solution precipitated with aluminum hydroxide is used as the starting material.

14. The process according to any of claims 1 to 13, characterized in that a chromatographically pre-purified cryoprecipitate solution precipitated with aluminum hydroxide is used as the starting material.

15. The process according to any of claims 1 to 14, characterized in that a pH precipitation is carried out prior to the hydroxylapatite chromatography to separate fibronectin.

16. The process according to any of claims 1 to 10, characterized in that a protein solution with recombinantly produced VWF is used as the starting material.

17. The process according to any of claims 1 to 16, characterized in that the hydroxylapatite used contains fluoride ions.

18. Use of hydroxylapatite for separating VWF molecules having high activity from VWF molecules having low activity.

19. Use of hydroxylapatite for the production of a VWF preparation having a high specific VWF activity.

20. Use of hydroxylapatite for raising the specific VWF activity of a VWF containing composition.

21. VWF containing composition obtainable by a process according to any of claims 1 to 16.

22. VWF containing composition, characterized in that it has a specific activity of at least 120 U/mg protein.

23. A composition according to claim 21 or 22, characterized in that it further has a specific VWF activity of at least 120 U/mg VWF antigen.

24. Use of a composition according to any of claims 21 to 23 for treating the von Willebrand syndrome.